DSSG Summit 2020

Community Competition

Keyboard Optimization

Optimizing a keyboard layout to minimize the workload for usage by an ALS patient

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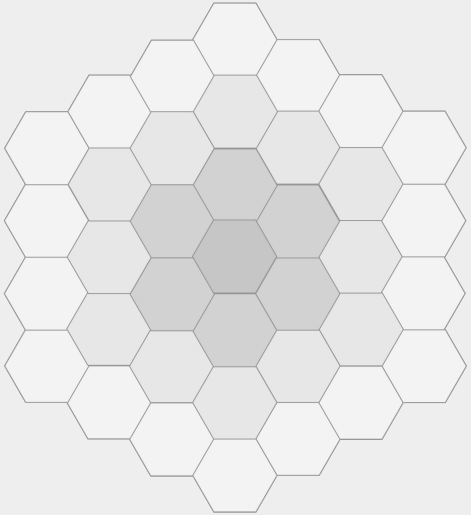
Keyboard optimization for **ALS patients**

Every

90 mins

an individual is diagnosed with ALS



Meet our **team**

João Fonseca

ML Researcher @ NOVA IMS

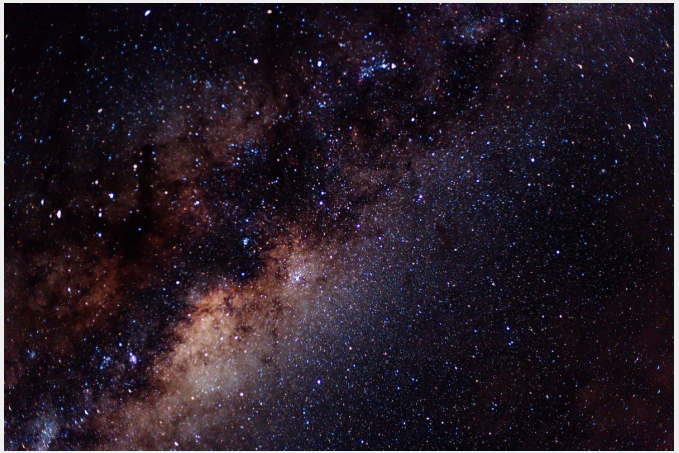
David Silva

ML Researcher @ NOVA IMS

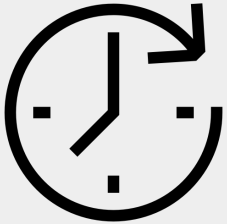
Allergic to Local Optima

The **challenges** we faced

Small training corpus



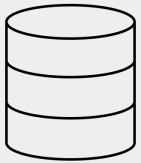
More combinations than stars in the universe



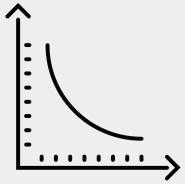
Slow cost function

What we **did**

Problem Reformulation

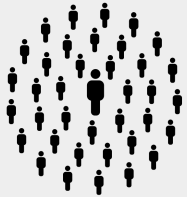


Expanded **dataset**

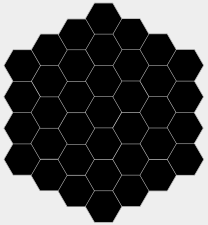


Alternative **objective function**

Keyboard Layout Search



Genetic algorithms

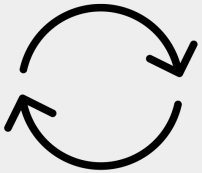


Over 2000 optimized **layouts**

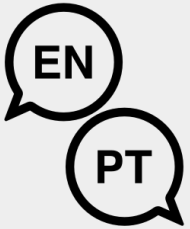
Our **results**

4%

Writing effort reduction

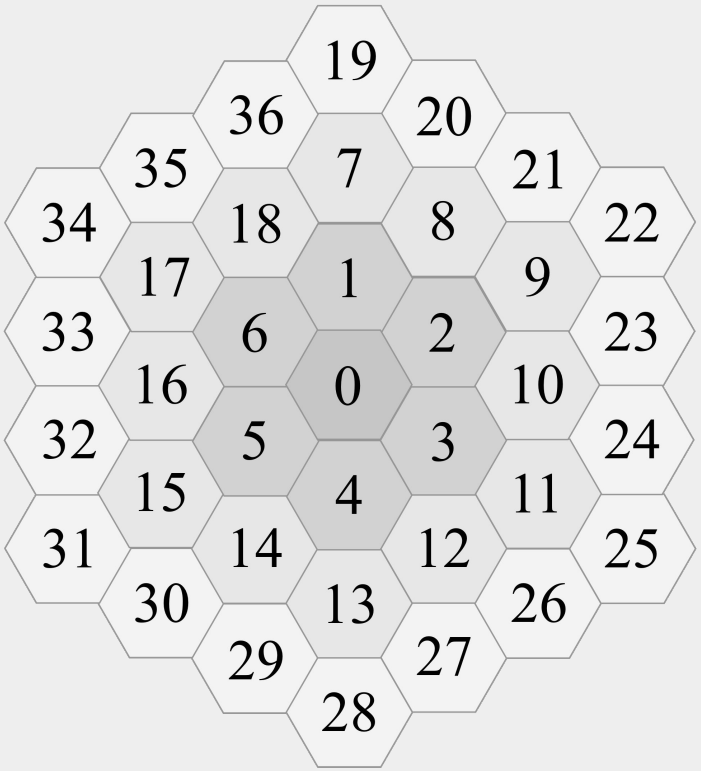


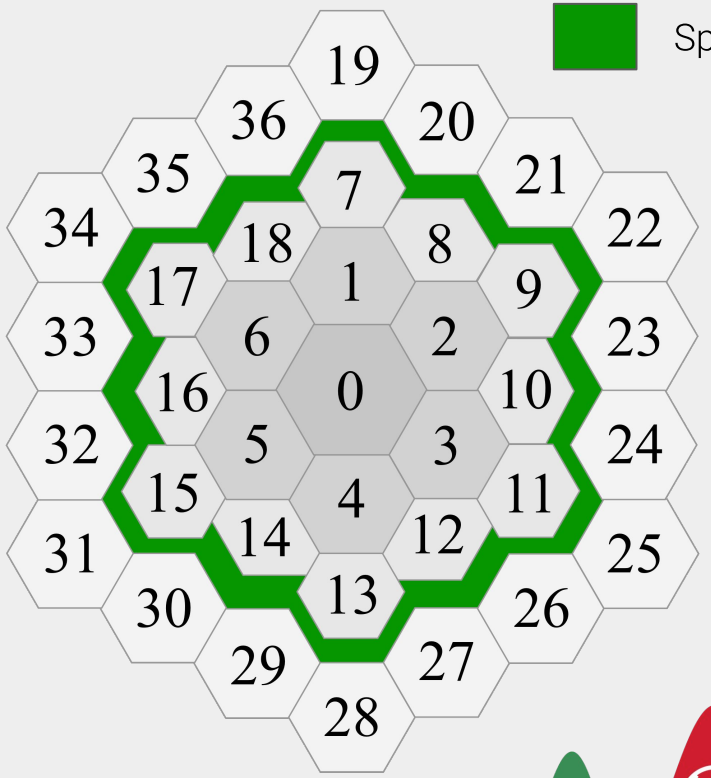
Replicable method (for any language)



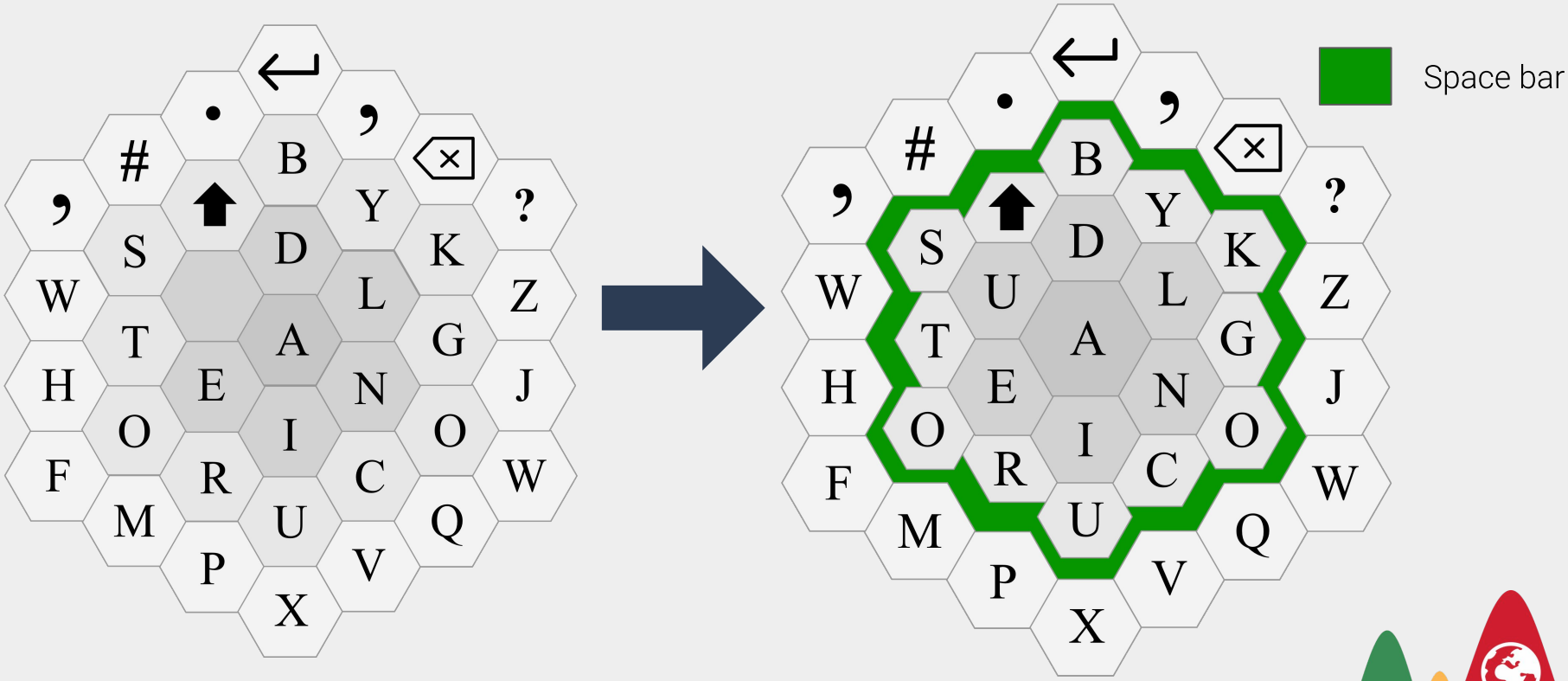
English and Portuguese Keyboard layouts

How to **improve** the layouts?





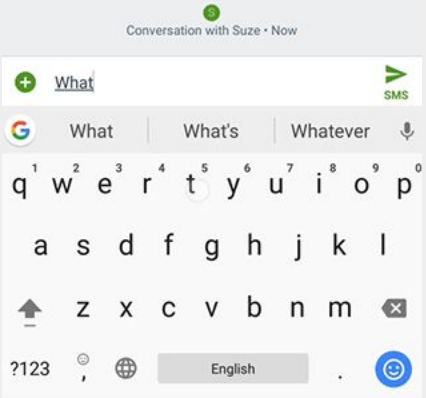
Our English **layout** suggestion



Other useful **technologies**

Generating Drone Chassis

Predicting the next words



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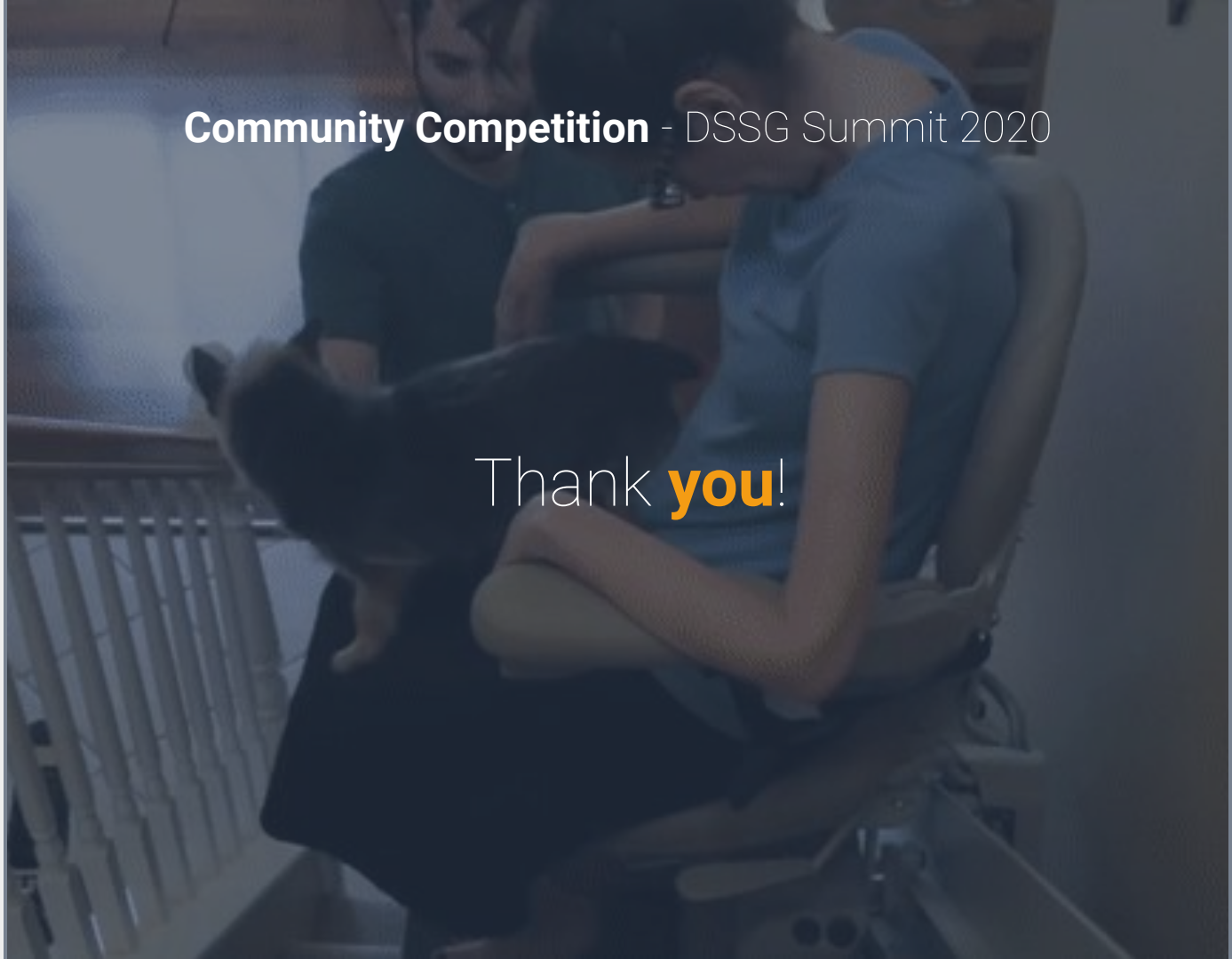

Thank **you**!